

Remarks and Arguments

Claims 1-60 have been presented for examination. Claims 1-4, 8, 11, 21-24, 28, 31, 41-44, 48 and 51 have been amended.

The specification was objected to because a reference to a related application needed to be updated. In response, paragraph [0001] has been amended to recite the current status of the related application.

Claims 3, 4, 8, 23, 24, 43 and 44 have been rejected under 35 U.S.C. §112, second paragraph, for lack of antecedent bases. In particular, claims 3, 23 and 43 were rejected for lack of antecedent bases for the terms “the storage space”, “the host” and “the requested logical volume used by the host”. In response, these claims have been amended to correct the antecedents. For example, claim 3 has been amended in line 3 to recite that “elements managing the storage device allocate storage space...” thereby eliminating the need for an antecedent. Similarly, claim 3 has been amended at line 4 to recite “a host” thereby eliminating the need for an antecedent. Finally, claim 3 has been amended at lines 9 and 10 to recite “a requested logical volume used by the host” thereby eliminating the need for an antecedent. Similar changes have been made to claims 23 and 43. As claims 4 and 44 were rejected for being dependent on a rejected parent claims, these latter claims now also have proper antecedents.

Claims 8 and 24 were rejected for lacking antecedent basis for the term “the host”. This recitation has been replaced by “a host” in these claims thereby eliminating the need for an antecedent. Thus, claims 3, 4, 8, 24, 43 and 44 now particularly point out and distinctly claims the invention as required by 35 U.S.C. §112, second paragraph.

Claims 1, 2, 5-10, 18-22, 25-30, 38-42, 45-50 and 58-60 have been rejected under 35 U.S.C. §102(e) as anticipated by U.S. Patent Publication No. 2002/0178380 (Wolf.) The examiner comments that the Wolf reference discloses the claimed subject matter.

The present invention is directed to a method and system for managing a set of resources in a computer system. In particular, these resources were designed to work with a management console. To this end, each resource provides an administrative application programming interface (API) containing methods that can be executed to

configure the resource. Administrative personnel can then use the management console to access the API methods and execute the methods after entering appropriate configuration parameters.

In order to automatically configure these resources, the invention associates one or more configuration “elements” with each resource. Each element directly interacts with its associated resource. For example, the element can query the resource to determine its characteristics and parameters. The element can also call the API methods of the resource to place the resource in a predetermined configuration. For example, one configuration element associated with a storage device might configure the storage device as high reliability storage (for example RAID 5.) Another element might configure the same storage device as non-redundant storage.

A configuration policy can then be created by a user by first selecting resources to be configured and then by selecting elements associated with those resources that provide the desired overall configuration of the resources. When the configuration policy is later executed, each element in the policy is invoked in order to properly configure the system. See, for example, the present specification, page 26, line 25 to page 28, line 27.

This is in contrast to configuration system disclosed in the Wolf reference which is designed to work with resources, such as routers, that can be configured by means of configuration files. The Wolf system constructs configuration files and downloads, or pushes, these files to the resources in order to perform the configuration (see, for example, Wolf, paragraphs 11 and 15). Wolf discloses no mechanism for operation with resources that export configuration APIs and require method calls to configure the resources. Instead Wolf discloses that user supplied parameters are converted into “configlets” which are then assembled in accordance with a configuration policy into a configuration file that is later sent to a resource to configure that resource (Wolf, paragraphs 16 and 17).

The claims have been amended to particularly point out this difference. For example, amended claim 1 recites, at lines 4-8, “in response to the user request, locating the multiple resources in the system, wherein each resource has an API including methods for configuring that resource and the system has, for each resource,

at least one element that can call selected methods in the API of that resource to place that resource in a predetermined configuration...” and, in lines 12-14, “...for each resource in the selected set, querying all elements to locate elements for that resource and displaying resource configurations produced by the located elements...” and finally in lines 20-23, “...from the user selection of resource configurations, creating a configuration policy that calls an element for each resource in the selected set in order to cause that element to call API methods of that resource to place that resource in a predetermined configuration.” Comparing this recitation to the disclosure of Wolf, it is clear that Wolf provides no mechanism for interacting with resources by calling API methods of those resources in order to configure the resources. The examiner equates the resource “attribute” as represented by the “configlets” of Wolf. However, it is clear that neither the resource attributes nor the configlets that represent the attributes interact with the resources by calling resource API methods as recited in claim 1. Instead, the configlets that represent the resource attributes are assembled into a configuration file that is applied to the resource to configure it. Thus, amended claim 1 patentably distinguishes over the cited Wolf reference.

Claims 2 and 5-7 are dependent, either directly or indirectly, on claim 1 and incorporate the limitations thereof. Therefore, they distinguish over the cited reference in the same manner as claim 1.

Claims 21 and 41 contain limitations that parallel those in claim 1 and have been amended in a similar fashion. Therefore they distinguish over the cited reference in the same manner as amended claim 1. Similarly, claims 22 and 25-27 are dependent, either directly or indirectly, on claim 21 and incorporate the limitations thereof. Therefore, they distinguish over the cited reference in the same manner as claim 21. Claims 42 and 45-47 are dependent, either directly or indirectly, on claim 41 and incorporate the limitations thereof. Therefore, they distinguish over the cited reference in the same manner as claim 41.

Claim 8 has also been amended to point out the differences between the invention and the cited reference. For example, claim recites, in lines 4-5, that “...each of the resources having an API including methods for configuring that resource...” and, in lines 6-9, that “...each element specifies configuration parameters to use to configure

the resource and can call selected methods in the API of the resource with the configuration parameters to place the resource in a predetermined configuration...” Finally, claim 8 recites in lines 15-18, “...calling the elements defined for the selected configuration policy which, in turn, call the API methods of the user selected resource in order to configure the user selected resource instance and the determined additional resource instances according to the element configuration parameters.” As discussed above, it is clear that the Wolf reference does not disclose any mechanism for interacting with the resources by calling API methods. Thus, claim 8 distinguishes over the cited Wolf reference in the same manner as amended claim 1.

Claims 9, 10 and 18-20 are dependent, either directly or indirectly, on claim 8 and incorporate the limitations thereof. Therefore, they distinguish over the cited reference in the same manner as claim 8.

Claims 28 and 48 contain limitations that parallel those in claim 8 and have been amended in a similar fashion. Therefore they distinguish over the cited reference in the same manner as amended claim 8. Similarly, claims 29, 30 and 38-40 are dependent, either directly or indirectly, on claim 28 and incorporate the limitations thereof. Therefore, they distinguish over the cited reference in the same manner as claim 28. Claims 49, 50 and 58-60 are dependent, either directly or indirectly, on claim 48 and incorporate the limitations thereof. Therefore, they distinguish over the cited reference in the same manner as claim 48.

Claims 3, 4, 11-17, 23, 24, 31-37, 43, 44 and 51-57 have been rejected under 35 U.S.C. §103(a) as obvious over Wolf in view of U.S. Patent No. 6,671,776 (DeKoning.) The examiner comments that the Wolf reference discloses all of the claimed limitation except that it does not explicitly disclose all of the network devices recited in the claims. However, the examiner claims that the unrecited network devices are well-known as evidenced by DeKoning and that it would have been obvious to combine Wolf and DeKoning because such elements are commonly configured by network configuration systems.

The DeKoning patent discloses a system for generating the topology of a network. While it does disclose various network devices, it does not disclose any method or mechanism for configuring a network. Thus, it does not supplement the Wolf

disclosure to supply the elements that interact with the resources by calling the resource API set that are missing in Wolf as discussed above. Since claims 3, 4, 11-17, 23, 24, 31-37, 43, 44 and 51-57 are dependent on one of the independent claims 1, 8, 21, 28, 41 and 48 and incorporate the limitations thereof, they distinguish over the combination of Wolf and DeKoning in the same manner as the independent claims distinguish over the Wolf reference.

In addition, claims 3, 4, 11-17, 23, 24, 31-37, 43, 44 and 51-57 also recite additional limitations not taught or suggested by the combination of Wolf and DeKoning. For example, claims 11, 31 and 51 recite "...using an element for the storage device to query the device to determine available storage space at each storage device instance that is available to the user selected resource instance." Neither Wolf nor DeKoning discloses an element that interacts with the resource to determine storage space. It is clear that the resource attributes and configlets disclosed in Wolf cannot perform the recited function. Thus, claims 11, 31 and 51 also distinguish over the cited combination of references for this reason.

In light of the forgoing amendments and remarks, this application is now believed in condition for allowance and a notice of allowance is earnestly solicited. If the examiner has any further questions regarding this amendment, he is invited to call applicants' attorney at the number listed below. The examiner is hereby authorized to charge any fees or direct any payment under 37 C.F.R. 1.17, 1.16 to Deposit Account number 02-3038.

Respectfully submitted



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